

JOYSTICK FOR CELLULAR PHONE

FIELD OF THE INVENTION

The present invention relates to cellular phones and more particularly to a
5 joystick for cellular phone having additional characteristics of ease manipulation.

BACKGROUND OF THE INVENTION

Cellular phones have been popular worldwide in recent years due to
portability thereof as a communication device. Further, a cellular phone may
10 incorporate a variety of software packages such as game, phone book, voice
box, alarm, message transmission, etc. With these software packages provided
by the manufacturer, the purpose of providing a multifunctional cellular phone to
the consumers may be achieved. Currently, user needs to press keys (e.g.,
direction keys) on cellular phone to play game. However, the size of direction key
15 is relatively small. Hence, it is difficult for user to precisely press a desired
direction key while playing game on cellular phone. This may frustrate users.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a joystick device for cellular
20 phone having a keypad consisting of a plurality of direction keys. The joystick
device comprises an upper fastening member on the keypad of the cellular
phone being clung onto the cellular phone and including a first central aperture,
a plurality of openings around the aperture, and two ridged members on both
outer sides; an abutment member between the upper fastening member and the
25 keypad and including a second central aperture, a plurality of projections around
the central aperture thereof each being received in the opening but leaving a gap
therebetween for providing an operating allowance, and a plurality of bottom

studs each corresponding to one of the projections; a joystick having a lower portion passed through the first central aperture of upper fastening member and fixed to the second central aperture of abutment member and a top handle; and a mating lower fastening member including two latches on both inner sides inserted into the ridged members for securing the upper and the lower fastening members and cellular phone together and a top pad frictionally contacting the bottom of the cellular phone; whereby the joystick is operative to move to one of up, down, left, and right directions for causing one stud to contact a direction key while playing due to the allowance provided by the gaps between projections and openings.

It is another object of the present invention to provide a joystick device for cellular phone further comprising a frame having a fitted magnifying glass extended from one side of the upper fastening member to cover a display of the cellular phone for increasing an apparent size thereof.

The above and other objects, features and advantages of the present invention will become apparent from the following detailed description taken with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a first preferred embodiment of joystick device according to the invention mounted on a cellular phone;

FIG. 2 is an exploded view of the FIG. 1 joystick device;

FIG. 3 is a sectional view of FIG. 1; and

FIG. 4 is a perspective view of a second preferred embodiment of joystick device according to the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIGS. 1 to 3, there is shown a joystick device constructed in accordance with a first embodiment of the invention mounted on a cellular phone 1. Joystick comprises an upper fastening member 21 disposed corresponding to keypad 11 of cellular phone 1 and including a first central aperture 23, a plurality of triangular openings 26 around first central aperture 23, and two ridged members 211 on both outer sides; an abutment member 31 between upper fastening member 21 and keypad 11 and including a second central aperture 32, a plurality of triangular projections 33 around the second central aperture 32 each being received in opening 26 but having a gap therebetween, and a plurality of bottom studs 35 each corresponding to a projection 33; a joystick 25 with lower portion passed through the first central aperture 23 and firmly fixed to the second central aperture 32 of abutment member 31 and having a handle 251 on the top; and a mating lower fastening member 27 including a pad 271 on the top frictionally contacting the bottom of cellular phone 1 and two latches 272 on both inner sides inserted into ridged members 211 for securing upper and lower fastening members 21 and 27 and cellular phone 1 together. With this construction, user may smoothly manipulate joystick 25 to move to one of up, down, left, and right directions for causing one stud 35 to contact a direction key on cellular phone 1 while playing due to the allowance provided by the gaps between projections 33 and openings 26.

Referring to FIG. 4, there is shown a second embodiment of joystick device. The difference between first and second embodiments is that a frame 212 having a fitted magnifying glass (e.g., convex lens) 213 is extended from one side of upper fastening member 21 to cover the display of cellular phone 1 for increasing apparent size of the display. Hence, user may see clearly the characters or icons shown on the display while playing.

The advantages of the invention are as follows: The speed is increased

while manipulating joystick 25 to cause studs 35 to contact direction key of cellular phone 1. Manipulation is easy and convenient without been adversely affected by the small size of direction keys.

- 5 While the invention has been described by means of specific embodiments, numerous modifications and variations could be made thereto by those skilled in the art without departing from the scope and spirit of the invention set forth in the claims.